

1 What is claimed is:

2 1. A thin type BGA semiconductor package comprising:

3 a composite substrate including a wiring board and a dummy die, wherein the wiring
4 board has an upper surface, a lower surface and an opening, the opening passes
5 through the upper surface and the lower surface, a step is formed in the opening, a
6 plurality of ball pads are formed on the lower surface, a plurality of connecting pads
7 are formed on the step and electrically connect with the ball pads, the dummy die is
8 attached to the lower surface of the wiring board and covers the opening to form a
9 chip cavity;

10 an integrated circuit chip disposed in the chip cavity, the chip having an active
11 surface and a back surface, a plurality of bonding pads being formed on the active
12 surface and electrically connected to the connecting pads of the wiring board, the
13 back surface of the chip being attached to the dummy die;

14 a package body formed in the chip cavity of the composite substrate; and
15 a plurality of solder balls on the ball pads.

16 2. The package of claim 1, wherein the dummy die has a thickness smaller than the
17 diameter of the solder balls.

18 3. The package of claim 1, wherein the dummy die has an exposed surface without
19 attaching the wiring board, a metal film is formed on the exposed surface.

20 4. The package of claim 1, wherein the wiring board has a plurality of ball-stacking pads
21 formed on the upper surface of the wiring board.

22 5. A thin type semiconductor package comprising:

23 a composite substrate including a wiring board and a dummy die, wherein the wiring
24 board has an upper surface, a lower surface and an opening, the opening passes
25 through the upper surface and the lower surface, a plurality of ball pads are formed on
26 the lower surface, a plurality of connecting pads are formed around the opening and
27 electrically connect with the ball pads, the dummy die is attached to the lower surface

1 of the wiring board and covers the opening to form a chip cavity;
2 an integrated circuit chip disposed in the chip cavity, the chip having an active
3 surface and a back surface, a plurality of bonding pads being formed on the active
4 surface and electrically connected to the connecting pads of the wiring board, the
5 back surface of the chip being attached to the dummy die; and
6 a package body formed in the chip cavity of the composite substrate.

7 6. The package of claim 5, wherein the dummy die has an exposed surface without
8 attaching the wiring board, a metal film is formed on the exposed surface.

9 7. The package of claim 5, further comprising a thermosetting compound mechanically
10 bonding the dummy die and the wiring board.

11 8. A thin type semiconductor package comprising:
12 a composite substrate including a wiring board and a dummy die, wherein the wiring
13 board has an upper surface, a lower surface and an opening, the opening passes
14 through the upper surface and the lower surface, a plurality of ball pads are formed on
15 the lower surface, a plurality of connecting pads are formed around the opening and
16 electrically connect with the ball pads, the dummy die has a first surface and a second
17 surface, the first surface of the dummy die includes a central region and a peripheral
18 region surrounding the central region, the peripheral region of the dummy die is
19 attached to the lower surface of the wiring board;
20 an integrated circuit chip having an active surface and a back surface, a plurality of
21 bonding pads being formed on the active surface, the back surface being attached to
22 the central region of the dummy die;
23 a plurality of bonding wires connecting the bonding pads of the chip with the
24 connecting pads of the wiring board; and
25 a package body formed in the opening of the wiring board and sealing the chip and
26 the bonding wires.

27 9. The package of claim 8, wherein the package body is a dispensing material.

1 10. The package of claim 8, wherein the dummy die has a thickness smaller than the
2 diameter of the solder balls.

3 11. The package of claim 8, wherein the dummy die has a metal film being formed on the
4 second surface thereof.

5 12. The package of claim 8, wherein the wiring board has a plurality of ball-stacking pads
6 on the upper surface of the wiring board.

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